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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,208	08/22/2003	Hideki Iwata	80329-0014 (W1037-01CI)	9026
23353 7590 12/27/2006 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			EXAMINER RONESI, VICKEY M	
			ART UNIT	PAPER NUMBER
			1714	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,208	<b>Applicant(s)</b> IWATA ET AL.	
	<b>Examiner</b> Vickey Ronesi	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5,6,14,15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6,14,15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2006 has been entered.
2. All outstanding rejections are withdrawn in light of applicant's amendment filed on 10/16/2006.
3. It is noted that in applicant's remarks filed on 10/16/2006 reference is made to a Declaration under 35 USC 1.132, however, no declaration was filed in the response filed on 10/16/2006.

#### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al (EP 1 031 726) in view of Hirai (US 6,057,393).

Kato et al discloses a compressor piston having a coat layer provided on the outer performer of the side surface of piston, wherein the coat layer comprises a 100 parts by weight

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(pbw) fluorocarbon resin such as PTFE; 5-400 pbw binder that is a thermosetting resin; and 0.05-12 vol % based on the fluorocarbon resin wear resistance additive such as barium sulfate and calcium carbonate (i.e., alkaline earth metal salts) (claim 1, page 3, lines 13-15 and 18-24).

Kato et al does not disclose the molecular weight or particle size of the fluorocarbon resin.

Hirai discloses a sliding member composition comprising polyethylene tetrafluoride and teaches that using a PTFE having a structure-forming ability having a molecular weight of  $3 \times 10^5$  to  $3 \times 10^7$  such as Teflon 6J (which is the commercially available PTFE used in the instant inventive examples) is advantageously added to provide for reinforcing properties (col. 3, lines 9-40). The structure-forming PTFE is used in addition to granular PTFE which is used to provide lubricating properties. Teflon 6J has a particle size of 470 microns as disclosed by applicant in paragraph 0029 of the applicant's specification..

Given that Hirai discloses the benefits of using a PTFE with the presently claimed molecular weight and particle size in a sliding member, it would have been obvious to one of ordinary skill in the art to utilize such a PTFE in the sliding composition of Kato et al.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al (EP 1 031 726) in view of Hirai (US 6,057,393) and further in view of Tanaka (US 5,780,396).

The discussion with respect to Kato et al and Hirai and paragraph 5 above is incorporated here by reference.

Kato et al does not disclose the use of an additional solid lubricant.

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Tanaka et al discloses sliding members containing PTFE and teaches that the use of 0.5-10 vol % of a solid lubricant advantageously further improves friction properties (col. 2, lines 39-57).

Given that Tanaka et al teaches improved friction properties when using solid lubricant, it would have been obvious to one of ordinary skill in the art to utilize an additional solid lubricant in the coat layer of Kato et al.

7. Claims 3, 6, 14, 15, and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al (EP 1 031 726) in view of Hirai (US 6,057,393) *OR* Kato et al (EP 1 031 726) in view of Hirai (US 6,057,393) and further in view of Tanaka et al (US 5,780,396), either of which in view of Niwa et al (GB 2 358 866, cited on IDS dated 5/17/2004).

The discussions with respect to Kato et al, Hirai, and Tanaka et al in paragraphs 5 and 6 above are incorporated here by reference.

Kato et al fails to disclose the use of bismuth or a bismuth alloy or a porous layer on the substrate.

With respect to the use of bismuth or a bismuth alloy, Niwa et al discloses a sliding material composition and teaches the use of bismuth and bismuth alloy particles in an amount of 3-40 vol % as a wear resistance additive (abstract, page 5, lines 20-26).

Given that Kato et al teaches the use of wear resistance additives having a Mohs hardness of at least 2.5 and further given that Niwa et al teaches the use of bismuth and bismuth alloy particles (Mohs hardness = 2.5) as wear resistance additives, it would have been obvious to one

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of ordinary skill in the art to utilize bismuth or bismuth alloy particles as the wear resistance additive in the composition taught by Kato et al.

With respect to the use of a porous layer, Niwa et al teaches adhesiveness of a resinous coating composition to a metal substrate is improved by rendering the surface of the substrate porous by sintering metal powder so that the coating composition can impregnate the substrate (page 3, lines 18-21; page 6, lines 1-6).

Given that adhesiveness is improved by using a porous substrate as taught by Niwa et al, it would have been obvious to one of ordinary skill in the art to utilize a porous substrate in the piston of Kato et al to thereby improved adhesion of its coat layer.

With respect to claims 23 and 24, they are drawn to a bearing which is not a piston as taught by Kato et al, however, given that the structure of the bearing is a cylinder, it is considered that the structure of a cylindrical piston as disclosed by Kato et al is physically capable of being a bearing like presently claimed and hence reads on the bearing.

### ***Response to Arguments***

8. Applicant's arguments filed 10/16/2006 have been fully considered but they are not persuasive. Specifically, applicant argues that the cylindrical piston of Kato et al is unrelated to a sliding member and one of ordinary skill in the art would not look to combine the teachings of the two.

In response, the coating composition of Kato et al is added to decrease wear in the piston, much like what the coating composition on a bearing is intended to do. Therefore, they are considered to be very much related and thus it is *prima facie* obvious to utilize any sliding

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member teachings whether it is with a piston or a bearing. While Hirai, Tanaka et al, and Niwa et al are to different compositions than that taught by Kato et al and do not disclose all the features of the present claimed invention, they are used as teaching references in the same field of endeavor, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these reference teach a certain concept, and in combination with the primary reference, disclose the presently claimed invention.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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12/18/2006  
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